

Amendments to the Claims

Listing of Claims:

- 5 1. (currently amended) An ~~optical disc drive~~ electronic device circuit comprising:
a bus interface for communications with a host;
an interface unit electrically coupled to the bus interface for downloading
operational firmware from the host and downloading initialization data
required for initializing the electronic device from the host;
10 a control circuit electrically coupled to the interface unit for transferring the
downloaded operational firmware to a volatile memory; and
a microprocessor electrically coupled to the control circuit for executing the
downloaded operational firmware while stored in the volatile memory;
wherein the microprocessor controls the normal operations of the ~~optical disc~~
15 ~~drive~~ electronic device circuit according to the downloaded operational firmware.
2. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 1 wherein
the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.
- 20 3. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 1 wherein
the interface unit is a macro.
4. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 3 wherein
the macro comprises handshaking, data reception, and writing received data into the
25 memory functions.
- 5-6. (cancelled)

7. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 1 wherein the host is a computer system.
- 5 8. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 1 wherein the microprocessor executes the downloaded operational firmware without accessing a non-volatile memory.
9. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 1 wherein
10 the normal operations of the ~~optical disc drive~~ electronic device circuit at least include reading data from an optical disc.
10. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 1 wherein the volatile memory comprises the downloaded operational firmware being
15 executed by the microprocessor to control normal operations of the ~~optical disc drive~~ electronic device circuit.
11. (currently amended) An ~~optical disc drive~~ electronic device comprising a download mode wherein operational firmware is downloaded from an external host and stored
20 into a volatile memory of the ~~optical disc drive~~ electronic device and initialization data required for initializing the electronic device is downloaded from the external host, followed by a normal mode wherein a microprocessor of the ~~optical disc drive~~ electronic device executes the operational firmware stored in the volatile memory to control normal operations of the ~~optical disc drive~~ electronic device.
- 25 12. (currently amended) The ~~optical disc drive~~ electronic device of claim 11 wherein the normal operations of the ~~optical disc drive~~ electronic device at least include reading data from an optical disc, processing the data, and transferring the processed data to

the host.

13. (cancelled)

5 14. (currently amended) The ~~optical disc drive~~ electronic device of claim 11 wherein the operational firmware is downloaded over a bus interface conforming to USB, IDE, SATA, SAS, or SCSI interface standards.

10 15. (currently amended) The ~~optical disc drive~~ electronic device of claim 11 wherein the host is a computer system.

15 16. (currently amended) A method of operating an ~~optical disc drive~~ electronic device, the ~~optical disc drive~~ electronic device comprising a control circuit connected to a microprocessor, a volatile memory, and a bus interface connected to a host, the method comprising:
downloading operational firmware from the host;
downloading initialization data required for initializing the electronic device from
the host;
writing the operational firmware into the volatile memory; and
20 the microprocessor executing the operational firmware in the volatile memory to control normal operations of the ~~optical disc drive~~ electronic device.

17. (cancelled)

25 18. (original) The method of claim 16 wherein the operational firmware is downloaded over a bus interface conforming to USB, IDE, SATA, SAS, or SCSI interface standards.

19. (currently amended) The method of claim 16 further comprising the ~~optical disc drive~~
electronic device transmitting an electrical signal to an application program in the
host to begin downloading the operational firmware.
- 5 20. (original) The method of claim 16 wherein the host is a computer system.
21. (currently amended) A computer system comprising:
a host computer comprising operational firmware for controlling operations of an
~~optical disc drive~~ electronic device and initialization data required for
10 initializing the electronic device; and
~~an optical disc drive~~ the electronic device comprising:
a volatile memory comprising the operational firmware downloaded from the
host computer over a connecting bus interface; and
a microprocessor executing the operational firmware in the volatile memory
15 for controlling normal operations of the ~~optical disc drive~~ electronic
device;
wherein the electronic device further downloads the initialization data from the host
computer.
- 20 22. (currently amended) The computer system of claim 21 wherein the normal operations
of the ~~optical disc drive~~ electronic device at least include controlling the rotational
speed of an optical disc in the ~~optical disc drive~~ electronic device and reading data
from the optical disc.
- 25 23. (original) The computer system of claim 21 wherein the bus interface conforms to
USB, IDE, SATA, SAS, or SCSI interface standards.
24. (cancelled)

25. (currently amended) An ~~optical disc drive~~ electronic device controller comprising:
a bus interface for communications with a host;
a volatile memory for storing operational firmware downloaded from the host;
5 a microprocessor for controlling normal operations of the ~~optical disc drive~~
electronic device by executing the operational firmware stored in the volatile
memory;
an RF circuit; and
a control circuit connected to the bus interface, the volatile memory, the
10 microprocessor, and the RF circuit;
wherein initialization data required for initializing the electronic device is
downloaded from the host.
26. (currently amended) The ~~optical disc drive~~ electronic device controller of claim 25
15 wherein the volatile memory comprises the downloaded operational firmware being
executed by the microprocessor to control normal operations of the ~~optical disc-~~
~~drive~~ electronic device.
27. (currently amended) An ~~optical disc drive~~ electronic device circuit used in a host
20 system, wherein the ~~optical disc drive~~ electronic device circuit has operational
firmware downloaded from the host system to a volatile memory through a bus
interface every time after the host being powered on, the ~~optical disc drive~~
electronic device circuit comprising:
a microprocessor for executing the downloaded operational firmware while stored
25 in the volatile memory;
wherein the microprocessor controls the normal operations of the ~~optical disc-~~
~~drive~~ electronic device according to the downloaded operational firmware, and
initialization data required for initializing the electronic device circuit is

downloaded from the host system.

28. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 27
wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface
5 standards.
29. (cancelled)
30. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 27
10 wherein the host system is a computer system.
31. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 27
wherein the microprocessor executes the downloaded operational firmware without
accessing a non-volatile memory.
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32. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 27
wherein the host system comprises the volatile memory.
33. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 27
20 wherein the host system comprises a host controller accessing the volatile memory
that is shared by the host system and the microprocessor during the normal
operation.
34. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 27
25 wherein the volatile memory is accessed only by the ~~optical disc drive~~ electronic
device circuit on the normal operation.
35. (currently amended) The ~~optical disc drive~~ electronic device circuit of claim 27

wherein the ~~optical disc drive~~ electronic device circuit comprises the volatile memory.

36. (new) An electronic device comprising:

- 5 a bus interface for communications with a host;
 an interface unit electrically coupled to the bus interface for downloading
 operational firmware from the host;
 a volatile memory;
 a control circuit electrically coupled to the interface unit for transferring the
10 downloaded operational firmware to the volatile memory;
 a non-volatile memory, storing initialization data required for initializing the
 electronic device without storing operational firmware; and
 a microprocessor electrically coupled to the control circuit for executing the
 downloaded operational firmware while stored in the volatile memory;
15 wherein the microprocessor controls the normal operations of the electronic
 device according to the downloaded operational firmware.

37. (new) A method of operating an electronic device, comprising:

- downloading operational firmware from an external host of the electronic device;
20 writing the operational firmware into a volatile memory;
 utilizing a non-volatile memory to store initialization data required for initializing
 the electronic device without storing operational firmware; and
 executing the operational firmware stored in the volatile memory to control normal
 operations of the electronic device.

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